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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,084	03/02/2004	Todd W. Steigerwald	5867-00800	2937

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DAFFER MCDANIEL LLP  
P.O. BOX 684908  
AUSTIN, TX 78768

EXAMINER
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NGUYEN, DONGHAI D

ART UNIT	PAPER NUMBER
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3729

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/18/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/791,084

Applicant(s)

STEIGERWALD ET AL.

Examiner

Donghai D. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 and 24-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 24-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 10/4/06 & 11/3/06.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 04, 2006 has been entered.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-9 and 24-27 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure, which is not enabling. The exact transmitted signal frequency/wavelength is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). It's not known exactly what is the length of the apparatus since the length of the apparatus is depended on the wavelength of the transmitted signal and this exact wavelength/frequency is not included in the claims of present invention.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

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5. Claims 1-9 and 24-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not known as to what is the exact length of the apparatus since the transmitted signal wavelength is not known, therefore, one cannot form an apparatus without knowing the wavelength or the frequency of the transmitted signal.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-9, 24 and 26-27 as best understood are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 6,411,261 to Lilly.

Regarding claim 1, Lilly discloses a method for forming an apparatus (100, see Fig. 2B) configured to reduce electromagnetic interference between a pair of antennas coupled to a wireless communication device (See Col. 1, lines 37-40 and Col. 3, lines 50-57), the method comprises: extracting a shape of the apparatus from a thin sheet of conductive material (104, 304, 804; etc.); folding the shape into a plurality of resonant circuit elements (see Figs. 10-12), each configured to resonate at or near a carrier frequency of a signal transmitted by only one of the pair of antennas (see Col. 1, lines 28-32); and wherein by the steps of extracting and folding, the apparatus is formed having a length substantially equal to one-half of the transmitted signal

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wavelength (the height of the apparatus is about  $0.005\lambda$  to  $0.05\lambda$  as disclosed in Col. 4, lines 45-47 and Fig. 10 shows the length (x) of the apparatus is about 14 times the height (y) of the apparatus (see the attachment of the annotation of Fig. 10). Therefore the length of the apparatus is about  $0.07\lambda$  to  $0.7\lambda$  that is covered the claimed value for the length of the present application). Note that each of the folded elements as shown in Fig. 2B of Lilly is as broadly as readable as a resonant circuit element as claimed by present application since it has the same configuration as Fig. 7D of application.

Regarding claims 2-5, Lilly discloses the thin sheet of conductive material comprises a metal selected from a group comprising iron (Fe), copper (Cu), gold (Au), silver (Ag), tin (Sn), and nickel (Ni), or a metal alloy selected from a group comprising beryllium copper (BeCu), phosphor bronze (Ph+Cu/Zn/Sn), magnesium alloys (Mg/Al/O) and steel (Fe/C) and a primarily ferrous-based material is stamping and laser or chemical etching (See, Col. 4, lines 24-32). Note that since Lilly disclose the same the conductive material for forming the apparatus as claimed above. Therefore, it is inherently comprised a relative permittivity value of about 0.0 F/m to about 1.0 F/m and a relative permeability value of about 10 H/m to about 100,000 H/m.

Regarding claim 6, Lilly discloses the plurality of resonant circuit elements comprise a plurality of rectangular elements (1034 or 1134 see Figs. 10-11) connected to and arranged above a common reference plane (1004 or 1104) by a plurality of vertical segments (1006 or 1106).

Regarding claim 7, Lilly discloses a dielectric material (514) between the plurality of rectangular elements and the common reference plane.

Regarding claims 8-9 and 24, Lilly discloses the plurality of resonant circuit elements include A-shaped elements (see Fig. 7), further related Figs. 8-12 show a plurality of relatively long domed elements spaced apart by a plurality of relatively thin slots and arranging a dielectric material within the relatively thin slots between the pluralities of relatively long domed elements (see Col. 7, lines 13-14).

Regarding claim 26, Lilly discloses the plurality of resonant circuit elements having a periodic surface (1034) that is less than or equal to one-tenth of the transmitted signal wavelength (the height of the apparatus is about  $0.005\lambda$  to  $0.05\lambda$  as disclosed in Col. 4, lines 45-47 and Fig. 10 shows a periodic surface 1034 is about the same or less than the height of the apparatus).

Regarding claim 27, Lilly discloses the apparatus is formed without a dielectric substrate (see Fig. 2B).

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-9 and 24-27 as best understood are rejected under 35 U.S.C. 103(a) as being unpatentable over Lilly.

Regarding claim 1, if argue that Lilly does not teach the apparatus is formed having a length substantially equal to one-half of the transmitted signal wavelength then it would have

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been obvious to one having ordinary skill in the art at the time the invention was made to form the apparatus having a length substantially equal to one-half of the transmitted signal wavelength, since it has been held that where the general condition of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Alller*, 105 USPQ 233.

Regarding claims 2-9, 24 and 26-27, see the rejection provided above.

Regarding claim 25, Lilly does not disclose the thin sheet of conductive material is selected from a range of thicknesses comprising about 0.1 mm to about 0.2 mm. It would have been an obvious matter of design choice to one having ordinary skill in the art at the time the invention was made to choose the thin sheet of conductive having any thickness level such as about 0.1 mm to about 0.2 mm, since applicants have not disclosed the specific thickness of about 0.1 mm to about 0.2 mm for the thin sheet of conductive material, would solve any stated problem or for any particular purpose and it appears that the invention would perform well with the thin sheet of conductive material thickness as disclosed by Lilly.

### ***Response to Arguments***

10. Applicants' arguments with respect to claims 1-9 and 24-27 have been considered but are moot in view of the new rejections.

11. Applicants' arguments filed October 3, 2006 regarding claims 1-9 and 23-27 have been fully considered but they are not persuasive.

Applicants amend the claim that raises a 112 1<sup>st</sup> and 2<sup>nd</sup> paragraphs (see items 2-5).

Applicants argue that “Lily fails to teach a method for forming an apparatus in which a length of the apparatus is substantially equal to one-half of a signal transmission wavelength”. The Examiner disagrees because in Lilly, especially Fig. 10 as marked up by Examiner (see attached), includes the claimed limitation of about  $0.07\lambda$  to  $0.7\lambda$  which includes the claimed one-half of the signal transmission wavelength of the present application as claimed by the present claims.

### *Conclusion*

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art references cited for their teachings of reducing electromagnetic interference between a pair of antennas, for example US Patent 4,460,899 to Schmidt et al disclose the apparatus T having the height of one-half of a signal transmission wavelength.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donghai D. Nguyen whose telephone number is (571)-272-4566. The examiner can normally be reached on Monday-Friday (9:00-6:00).

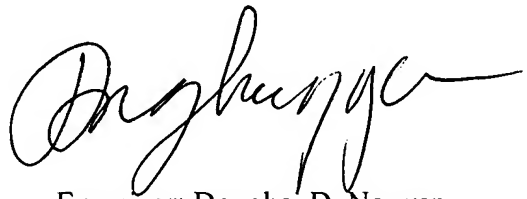
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter D. Vo can be reached on (571)-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DN

January 5, 2007



Examiner: Donghai D. Nguyen

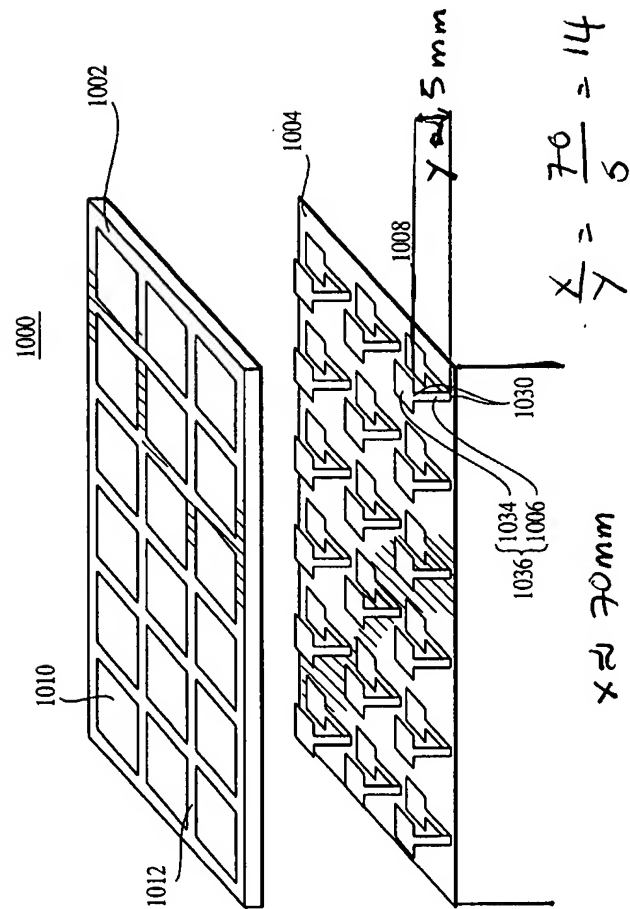


Figure 10